

## **I CLAIM:**

1. A method of sealing a valve and tank enclosure, said method comprising the steps of:

- (a) providing an outer support structure, said outer support member including:
  - (i) a first member;
  - (ii) a second member; and
  - (iii) opposing side members;
  - (A) said first, second, and opposing side members defining a perimeter;
- (b) providing an inner assembly;
- (c) arranging said inner assembly within said outer support structure to form a channel therebetween, said channel extending along said perimeter of said outer support structure;
- (d) providing a cover; and
- (e) positioning said cover within said channel to prevent direct passage of environmental water spray and divert the environmental water spray to an area where the water spray is passively discharged.

2. An enclosure assembly for use with hydraulic equipment, said enclosure assembly comprising:

- (a) a shelf bracket, said shelf bracket including:
    - (i) a first member;
    - (ii) opposing side members; and
    - (iii) a second member extending between said opposing side members;
    - (A) said first, second, and opposing side members defining a perimeter;
  - (b) a valve and reservoir assembly secured within said shelf bracket;
  - (c) a channel defined by a space between said valve and reservoir assembly and said shelf bracket, said channel extending along said perimeter of said shelf bracket;
- and

(d) a cover having an edge, said edge positioned within said channel; said cover edge and said channel arranged to prevent the passage of environmental water spray into said enclosure assembly while permitting discharge of internal moisture out from said enclosure assembly.

3. The enclosure assembly of claim 2, wherein said cover edge and said channel form a labyrinth seal along said perimeter.

4. The enclosure assembly of claim 3, wherein said labyrinth seal comprises a pathway having a 180-degree turn.

5. A method of isolating a valve assembly from moisture contact, said method comprising the steps of:

(a) providing a frame having a base surface, said frame having an opening located adjacent said base surface;

(b) providing a reservoir coupled to said frame, said reservoir and said frame defining a space between said reservoir and said base surface of said frame, said reservoir including a horizontal support member to which the valve assembly is attached;

(c) coupling at least one hydraulic line to the valve assembly by accessing the valve assembly through at least one aperture in the horizontal support member;

(d) extending said hydraulic line in a downwardly direction toward said base surface to prevent moisture from traveling upward along said hydraulic line toward said valve assembly;

(e) arranging said hydraulic line to extend through said space between said reservoir and said base surface of said frame; and

(f) arranging said hydraulic line to exit said frame through said opening, said opening being located in a lower region of said frame to prevent moisture from contacting the valve assembly located in an upper region of said frame.

6. A hydraulic arrangement for use on a vehicle, said hydraulic arrangement comprising:

- (a) a reservoir for containing a hydraulic fluid, said reservoir having a bottom surface;
- (b) a frame sized to at least partially enclose said reservoir, said frame including:
  - (i) a base surface; and
  - (ii) an opening adjacent to said base surface;
- (c) said reservoir being coupled to said frame, said reservoir and said frame defining a space between the bottom surface of said reservoir and the base surface of said frame; and
- (d) a valve assembly, said valve assembly including:
  - (i) at least one hydraulic valve component; and
  - (ii) at least one hydraulic line secured to said hydraulic valve component;
    - (A) said hydraulic line extending downward from said hydraulic valve component and through said space between the bottom surface of said reservoir and the base surface of said frame; and
    - (B) said hydraulic line exiting said frame through said opening.

7. The hydraulic arrangement of claim 6, wherein said reservoir includes a front curved region, said front curved region accommodating the extension of said hydraulic line from said hydraulic valve component through said space between the bottom surface of said reservoir and the base surface of said frame without structurally damaging said hydraulic line.

8. The hydraulic arrangement of claim 6, wherein the valve assembly includes a plurality of hydraulic valve components and a plurality of corresponding hydraulic lines, the plurality of hydraulic lines depending from said plurality of hydraulic valve components.

9. The hydraulic arrangement of claim 6, wherein the arrangement further includes cabling to actuate the hydraulic valve component, said cabling:

(a) extending downward from said hydraulic valve component and through said space between the bottom surface of said reservoir and the base surface of said frame; and

(b) exiting said frame through said opening.

10. The hydraulic arrangement of claim 6, wherein said valve assembly is coupled to a pivoting shelf, said pivoting shelf operating to pivot said valve assembly downward and away from said reservoir; said hydraulic line flexibly accommodating the pivotal movement of said pivoting shelf.

11. The hydraulic arrangement of claim 10, wherein said pivoting shelf includes a first arm and a second arm, said first and second arms each having a fixed end and a pivoting end, said fixed ends of said first and said second arms being fixedly attached to opposing sides of said pivoting shelf, and said pivoting ends being pivotally attached to opposing sides of said reservoir.

12. The hydraulic arrangement of claim 10, wherein said pivoting shelf includes apertures through which said hydraulic line extends.

13. A method of accessing a valve assembly of a hydraulic assembly unit, said method comprising the steps of:

(a) providing an enclosure assembly, said enclosure assembly including:

(i) a reservoir in fluid communication with the valve assembly;

(ii) a pivoting shelf upon which said valve assembly is coupled, said valve assembly having a front side, a rear side, and a top side;

(iii) a detachable cover;

(b) removing said detachable cover; and

(c) selectively accessing said front side, said rear side, and said top side of said valve assembly, without uncoupling said valve assembly from said pivoting shelf by pivoting said shelf and said valve assembly to a selected orientation.

14. The method of accessing a valve assembly according to claim 13, said method further comprising the steps of:

- (a) accessing said front side and said top side of said valve assembly from a first direction;
- (b) pivoting said shelf and valve assembly to a second orientation to expose said front side, said top side, and said rear side of said valve assembly for access from a second direction; and
- (c) pivoting said shelf and said valve assembly to a third orientation to expose said top side and said rear side of said valve assembly for access from a third direction.

15. The method of accessing a valve assembly according to claim 14, wherein pivoting said shelf and valve assembly from said first orientation to said third orientation angles said valve assembly approximately 90 degrees from an originating upright position.

16. A method of flexibly securing a hydraulic reservoir to a support structure, said method comprising the steps of:

- (a) coupling said reservoir at a first location to the support structure;
- (b) coupling said reservoir at a second location to the support structure;
- (c) coupling said reservoir at a third location to the support structure;
- (i) said first, second, and third locations defining a triangular configuration; and
- (d) permitting the support structure to flex under torsional forces and substantially isolate the hydraulic reservoir from the torsional forces due to the triangular configuration defined by the first, second, and third locations.

17. A hydraulic reservoir enclosure assembly, comprising:

- (a) a reservoir for containing a hydraulic fluid, said reservoir having a front side and a back side;

- (b) a frame sized to at least partially enclose said reservoir, said frame including:
  - (i) a first side support structure;
  - (ii) a second side support structure; and
  - (iii) a bottom support structure extending between the first and second side support structures; and

(c) a mounting arrangement coupling said reservoir to said bottom support structure of said frame, said arrangement consisting of:

- (i) a first mounting member;
- (ii) a second mounting member;
- (iii) a third mounting member; and
- (A) said first, second, and third mounting members being positioned in a triangular configuration.

18. The reservoir enclosure assembly of claim 17, wherein each of said first, second and third mounting members is a bracket, each of said brackets having:

- (a) an attachment flange;
- (b) an extension portion to offset said reservoir from said bottom support structure to provide a space therebetween; and
- (i) said triangular configuration and said space isolating said reservoir from transaxial flexure.

19. A valve and tank enclosure assembly, for use on a snowplow, said valve and tank enclosure assembly comprising:

- (a) a frame, said frame including:
  - (i) a bottom support structure;
  - (ii) a first side support structure and an opposing second side support structure;
  - (iii) a rear support structure; and
  - (iv) said bottom, rear, and opposing side structures joined to define a partial enclosure, said partial enclosure having a perimeter;

- (b) a reservoir for containing hydraulic fluid, said reservoir including:
  - (i) a bottom surface;
  - (ii) a first, a second, and a third mounting location arranged in a triangular configuration at the bottom surface of said reservoir, said reservoir being placed at least partially within said frame and coupled to said frame at said first, second, and third mounting locations such that a space is provided between said bottom surface of said reservoir and said frame;
- (c) a pivoting shelf, said pivoting shelf including:
  - (i) a first arm and a second arm, each arm including:
    - (1) a fixed end wherein said fixed ends of said first and said second arms are fixedly attached to said pivoting shelf; and
    - (2) a pivoting end, wherein said pivoting ends of said first and said second arms are coupled to said reservoir to selectively provide pivotal movement of said pivoting shelf;
- (d) a valve assembly coupled to said pivoting shelf, said valve assembly including:
  - (i) at least one hydraulic valve component; and
  - (ii) at least one hydraulic line;
    - (1) said hydraulic line arranged to:
      - (A) depend downwardly from said hydraulic valve component through an aperture in said pivoting shelf;
      - (B) bend around a curved region of said reservoir;
      - (C) extend through said space between said reservoir and said frame;
      - (D) exit said frame through an opening located near said rear and bottom support structures of said frame; and
    - (2) said hydraulic line flexibly arranged to accommodate the pivotal movement of said pivoting shelf;
- (e) a channel defined by a gap between said reservoir and said frame, said channel extending along said perimeter of said frame; and

(f) a cover having an edge, said edge positioned to cooperate with said channel to provide a diverted pathway along said perimeter of said shelf bracket for preventing the passage of water spray from the environment into said enclosure assembly while permitting discharge of moisture from said enclosure assembly to the environment.

20. A snowplow operating system, said operating system comprising:

(a) a snowplow having a frame, said frame;

(b) at least one hydraulic powered unit;

(c) a pump;

(d) a valve and tank enclosure assembly, said valve and tank enclosure assembly being mounted to said frame of said snowplow and in fluid communication with said pump and said hydraulic powered unit; said valve and tank enclosure assembly including:

(i) an enclosure frame;

(ii) a reservoir, said reservoir being mounted within said enclosure frame such that a space is provided between said reservoir and said enclosure frame;

(iii) a shelf pivotally coupled to said reservoir;

(iv) a valve assembly coupled to said shelf, said valve assembly

including:

(1) at least one hydraulic valve component; and

(2) at least one hydraulic line, said hydraulic line arranged to extend through said space provided between said reservoir and said enclosure frame;

(v) a channel defined by a gap between said reservoir and said enclosure frame, said channel extending along a perimeter of said enclosure frame; and

(vi) a cover having an edge, said edge positioned to cooperate with said channel to provide a diverted pathway along said perimeter of said shelf bracket for preventing the passage of water spray from the environment into said valve



and tank enclosure assembly while permitting discharge of moisture from said valve and tank enclosure assembly to the environment.